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MEMORANDUM

TO: Systems using Continuous Monitoring Devices for pH, Residual Chlorine, and Temperature

FROM: R. Wayne Davis, Director
Office of Environmental Laboratory Certification

DATE: September 22, 2000

SUBJ: Calibration of Continuous Monitoring Devices

Various manufacturers are marketing instruments that are capable of multiple in-line assessments of pH, residual chlorine, and temperature within a predetermined period of time. The use of such instruments is approved for compliance monitoring as long as they are operating in accordance with accepted EPA analysis regimens. Therefore, such instrumentation must be calibrated at least daily to ensure the accuracy of the reported values. Appropriate records of the daily calibration checks must be kept to verify that the checks are being performed.

Many of the continuous monitoring instruments now on the market can easily be directly calibrated on a daily basis. Direct calibration of any instrumentation used for compliance monitoring is always ideal. However, the Department acknowledges that direct daily calibration of some of the continuous monitoring instrumentation currently marketed can be difficult, if not impossible.

As an alternative to direct calibration for pH and Residual Chlorine, it will be acceptable for a laboratory to properly calibrate a bench-top instrument daily and compare a sample value from the continuous monitoring instrument to a sample value obtained from the properly calibrated bench-top instrument. For the pH analysis, the value obtained by the continuous monitor must agree with the bench-top meter within 0.2 pH unit. For Residual Chlorine analysis, the value obtained from the continuous monitoring device must agree with the value obtained from the bench-top instrument within ten (10) percent. Appropriate records of the daily comparison checks must be kept to verify that the checks are being performed.

For Temperature analysis, the continuous monitor must be checked at least monthly against a NIST or NIST-traceable reference thermometer. The value obtained by the continuous temperature monitor must agree with the NIST or NIST-traceable reference thermometer within two (2) degrees. Appropriate records of the monthly comparison checks must be kept to verify that the checks are being performed.

Should there be any questions concerning the protocols described herein, please contact the

Laboratory Certification Program at (803) 896-0970.